

REMARKS

In the Office Action dated September 15, 2004, claims 1, 5, 6, 8, 9, 13, 14, 16, 17 and 21 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Brunk (U.S. Patent No. 6,694,041). In addition, claims 2-4, 7, 10-12, 15 and 18-20 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Brunk in view of Chang (U.S. Patent No. 6,256,398). In response, Applicant has amended the independent claims 1, 9 and 17 to more clearly distinguish the claimed invention from the cited references. In view of the amendments to the claims and the following remarks, Applicant respectfully requests the allowance of the pending claims 1-21.

A. Patentability of Amended Independent Claims 1 and 9

The original independent claims 1 and 9 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Brunk. In response, Applicant has amended the independent claims 1 and 9 to more clearly distinguish the claimed invention from the cited reference. The amended independent claim 1 recites a method of embedding information in images comprising:

"detecting first type pixel blocks of an input image, each of said first type pixel blocks including a plurality of pixels, said first type pixel blocks being dependent on pixel values within said first type pixel blocks; and modulating said first type pixel blocks of said input image based on said information to produce an output image, said output image including said input image and said information" (emphasis added).

As explained below, the recited "detecting" and "modulating" elements of the amended independent claim 1 are not disclosed in Brunk. Thus, Applicant respectfully asserts that the amended independent claim 1 is not anticipated by Brunk, and thus, should be allowed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. As correctly stated in the Office Action, Brunk does disclose "a modified error diffusion method that embeds a watermark comprising a set of binary values at specified dot locations in a binary image." Furthermore, the method of

Brunk does assign to these locations the corresponding values of the watermark”.

However, the specified dot locations used by the Brunk method are pixel locations, as described in column 4, lines 1-14. Thus, the Brunk method operates at the pixel level, not at the level of pixel blocks, as is the case in the method of the amended

5 independent claim 1. Consequently, Brunk does not disclose the element of
“*detecting first type pixel blocks of an input image, each of said first type pixel blocks including a plurality of pixels, said first type pixel blocks being dependent on pixel values within said first type pixel blocks*” (emphasis added), as recited in the amended independent claim 1. Similarly, Brunk does not disclose the element of “*modulating*
10 *said first type pixel blocks of said input image based on said information to produce an output image, said output image including said input image and said information,*” as further recited in the amended independent claim 1. Since each recited element of the amended independent claim 1 is not disclosed in the cited reference of Brunk, the amended independent claim 1 cannot be anticipated by Brunk. As such, Applicant
15 respectfully requests that the amended independent claim 1 be allowed.

The amended independent claim 9 recites similar limitations as the amended independent claim 1. Thus, the above remarks are also applicable to the amended independent claims 9. As such, Applicant respectfully asserts that the amended claim
20 9 is also not anticipated by Brunk, and thus, should be allowed.

B. Patentability of Amended Independent Claim 17

Similar to the original claims 1 and 9, the original independent claim 17 was
25 rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Brunk. In response, Applicant has also amended the independent claim 17 to more clearly distinguish the claimed invention from the cited reference. As amended, the independent claim 17 recites “detecting” and “modulating” elements, which are similar to the recited “detecting” and “modulating” elements in the amended
30 independent claim 1. Thus, the amended independent claim 17 is allowable for at least the same reasons as the amended independent claim 1.

In addition, the amended independent claim 17 further recites “*converting pixels of said input image into halftones, including diffusing halftone errors*”

associated with said first type pixel blocks to neighboring pixel blocks of said first type pixel blocks on a block-by-block basis.” As correctly stated in the Office Action, Brunk does disclose “a modified error diffusion method that embeds a watermark comprising a set of binary values at specified dot locations in a binary image.”

- 5 However, the modified error diffusion method of Brunk is performed on pixels, not on pixel blocks, as is the case in the method of the amended independent claim 17. Thus, Brunk does not disclose “diffusing halftone errors associated with said first type pixel blocks to neighboring pixel blocks of said first type pixel blocks **on a block-by-block basis**” (emphasis added), as recited in the amended independent claim 17. As
10 such, Applicant respectfully asserts that the amended independent claim 17 is not anticipated by Brunk, and thus, should be allowed.

C. Patentability of Dependent Claim 2-8, 10-16 and 18-21

- 15 Each of the dependent claims 2-8, 10-16 and 18-21 depends on one of the amended independent claims 1, 9 and 17. As such, these dependent claims include all the limitations of their respective base claims. Therefore, Applicant submits that these dependent claims are allowable for at least the same reasons as their respective base claims.

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Applicant respectfully requests reconsideration of the claims in view of the claim amendments and the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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